Enterprise Data Maintenance Automated and Manual Coding Assisted By GPS And Video

Robert E. Hanson
President
Meltemi Enterprises, Inc.
6095 Gascony Lane
Tallahassee , FL   32308

Phone: (850) 893-0726
Fax: (850) 893-0726
E-Mail: meltemiinc01@cs.com

We believe that this would be of interest in the areas of "Data Capture Technology", "Roadway Information Systems", "GIS", "Automated Vehicle Logging", and "Linear Referencing systems".

Project Description:

For the last five plus years, Alabama has gathered images and data on the roadway environment (using KAR II by Meltemi Enterprises, Inc.) for the same reasons many other entities have done the same. What Alabama has done in addition to the gathering of images is to continually increase its data elements while updating the existing elements. It is the maintenance and expansion of data elements that is the topic of this discussion.

Alabama has one video-logging vehicle that is in use almost year-round. This vehicle gathers images on video tape and CDs, GPS data for the route traveled, and roll and pitch data while the two-person crew code a few data elements. This data is then sent to an enterprise database where it is merged with existing data. The enterprise dataset is used for the generation of reports on elements in the roadway environment. This data is routinely manually checked in-house through a review of the data against videolog tapes.

A fleet of four inventory vehicles with single occupants also traverses the highways equipped with similar inventory software to check the existing datasets and gather new elements. The checked datasets are used in an update process against the enterprise dataset. These vehicles are also equipped with GPS hardware for the capture of vehicle path.

Alabama recently purchased an updated videolog vehicle and updated the inventory vehicles with similar application software. The updated videolog system provides videotape as well as still images at preset intervals on CD-ROM discs. The application displays the data in tabular and graphic forms for the

crew's examination of existing or checking newly coded items. While the videolog crew is the only operation gathering images, the inventory crew can identify areas where the environment has changed by a comparison to the CD. The same software used in the videolog and inventory vehicles is used in-house for the review of the data against the pictures.

Why:

The amount of effort, in time and money, that goes into the gathering and maintenance of an enterprise dataset is a constant concern for every private and public operation. It is no wonder that so much has been written about it and it has been the topic of many discussions. The process used for the field data gathering and checking of such a dataset in Alabama is not a breakthrough in thought; it is not rocket science; it is a simple lesson in one successful operation. Behind every successful operation there is a group dedicated to its success and willing to put forth the effort to continually improve the product.

This is a Best Practices example because it combines age-old proven concepts with today's technologies. The concept of old was to visit the field to collect data for enterprise reporting. Today we visit the field to gather a minimum amount of data and to verify current datasets. The difference is that one of the datasets that is collected in the field allows the further expansion of data elements in the relative safety and comfort of the office environment. This dataset (images of the roadway) also becomes a historical record of the roadway environment at the time of collection.

This new dataset is used in the office and back in the field during the re-inventory process to compare the existing environment to the historical environment. Sometimes it is easier to notice a change in an area and then observe the new items, than it is to spot a new item alone.

The technologies to be discussed and related in this presentation include:

manual data entry into an inventory record; clicking on an icon in the PC desktop for the rapid entry of data; pressing an image on a data entry tablet for rapid data entry; automatic collection of GPS data for the making of maps and the verification of roads traveled; automatic collection of grade, cross-slope, and heading; and the automatic collection of roadway images.

The success of this effort is due to the continued routine effort to gather and maintain the datasets. Cross training of the crews among videolog, inventory and in-house operations helps in the maintenance of full staffing. This is also a very important concept in these times of staff reductions.